

8/29/19 – written by Mike Rhodes

The accident airplane was fueled in anticipation of delivery on Monday 8/26/19, but weather prevented it from being delivered. It was parked inside Plant 1 until about 30 minutes before delivery on Thursday.

At around 9:30am on the accident day, I was in the Air Tractor Flightline truck in front of Plant 1 when 502A-3210 started up (on the water pit) and taxied out for takeoff. Several minutes later, Joe Hughes and I observed the takeoff from inside the truck on the ramp. We immediately noted the unmistakable "propeller surge" sound as the airplane climbed out after liftoff. The airplane climbed to approx. 200 feet along the centerline of the runway, continuing to "propeller surge" the entire length of the 5000+ ft runway. I noted that the airplane began to gradually slow down, loose energy, increase pitch attitude, and descend, and I commented to Joe that "the prop sure is surging", then "he needs to pull the propeller control back to make it stop surging", and then "he needs to lower the nose and accelerate and climb....". At that time the airplane was observed to be in a gradual descent as it disappeared behind a hangar building. We watched for the airplane to reappear on the other side of the hangar building, and when it didn't, we both suspected that the airplane had crashed and we drove down the taxiway toward the likely location of the crash.

Approaching the end of the runway 31 taxiway, we saw a shiny object several hundred yards into the pasture. As we got a little closer, it was obvious that it was the airplane, and that both wings were still attached, and the cockpit was visible in the upright position. Smoke could be seen coming from the exhaust stacks.

We stopped at the fence line next to a cattle pen and saw the pilot walking toward the truck, about 75 yards away.

After verifying that the pilot was ok with no injuries, I made the call to NOT call 911, but instead to call the plant and ask for Kyle Schroeder (first responder, firefighter, crash investigator). I also sent a text to the pilot's father, who had departed in his King Air heading to Houston about 5 minutes earlier. Contact was made with the pilot's father via text message, and I let him know that there had been an accident, that the pilot was fine, and that he needed to come back.

While I was making contact with help, Joe Hughes climbed into the airplane, turned off the Battery switch, ensured that the fuel condition lever was in Cutoff, and pulled the fire extinguisher out of its mount, in case there was a fire. Fuel was flowing from the left wing, and also from the fuselage in the vicinity of the header tank and a rate of at least 5 gallons per minute. Smoke from the exhaust stacks eventually decreased. Contact was made with Jake Englishbee (an Olney firefighter and Final assembly Lead), as well as Kyle Schroeder, and both of them, as well as Brandon Bitner and Cody Dixon arrived at the scene within 5 minutes.

Professional Opinion: PT6 powered Air Tractors have a tendency to "propeller surge" during takeoff if the pilot doesn't cycle the propeller several times before takeoff. This tendency is most common with small PT6s, and is rarely seen on large PT6s. An airplane that has been inactive (parked in a hangar) for a long period of time is noticeably more prone to this propeller surge. The propeller surge is characterized by the propeller overspeeding as it makes takeoff RPM, and then underspeeding when the Overspeed Governor takes over and coarsens the prop pitch. This cycling (overspeed, underspeed, overspeed, underspeed, etc.) occurs at a frequency of about once per second, and can last several tens of seconds if allowed to develop. I've heard this best described by Ron Hollis of Covington Aircraft as "the prop governor and the overspeed governor are fighting each other.." The best practice for eliminating a propeller surge is to reduce the propeller speed to a speed below maximum RPM by pulling the blue knob a few degrees aft. This usually resolves the prop surge.


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